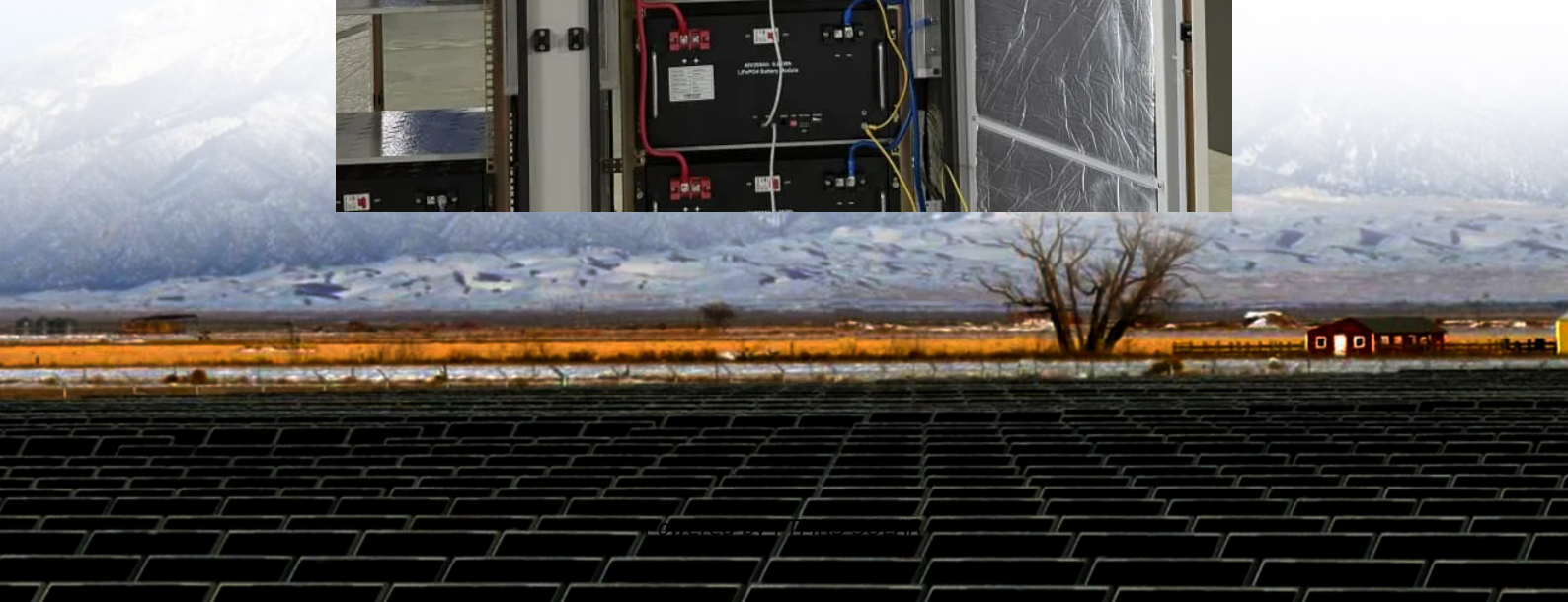


High-temperature resistant mobile energy storage container for field research in Tuvalu





Overview

What is mobile thermal energy storage (MTES)?

The challenges lie in the spatial and temporary mismatch of the heat demand and supply. Mobile thermal energy storage (M-TES) provides a potential solution to the challenges through for example, recovering the industrial waste heat to meet demands in remote and isolated communities.

What is a mobile thermal energy storage device?

The mobile thermal energy storage device has a configuration as shown in Fig. 1 a. It is containerised with a cuboid shape. Two round-to-rectangular connectors located at the lower part of the front end serve as the inlet and outlet of the heat transfer fluid.

Can a mobile thermal energy storage device address off-site industrial waste heat recovery?

Closed-loop hot air flow of up to 400 °C utilized achieving a full charge in 10 h. 97 % discharging efficiency with a mean rate and temperature of 10 kW and 195 °C. This study concerns with a modelling led-design of a novel mobile thermal energy storage (M-TES) device aimed to address off-site industrial waste heat recovery and reuse in the UK.

Why is mobile energy storage technology important?

With increasing share of intermittent renewable energies, energy storage technologies are needed to enhance the stability and safety of continuous supply. Among various energy storage technologies, mobile energy storage technologies should play more important roles, although most still face challenges or technical bottlenecks.



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